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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2019-07-01-04 **Date: 23-03-19**

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of road cut portion done by BWSSB at Sai Nagara Phase-2 and Jyothi Nagara Surrounding areas in Ward No:03 Attur.

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road, Yelahanka, Bangalore-560064

Customer's Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 21-03-19

Sample Type : Fine Aggregate(M Sand)

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 21-03-19

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	28	28	2.8	97.2	90-100	90-100	90-100	95-100
3	2.36 mm	54	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	240	322	32.2	67.8	30-70	55-90	75-100	90-100
5	600 micron	202	524	52.4	47.6	15-34	35-59	60-79	80-100
6	300 micron	206	730	73.0	27.0	5-20	8-30	12-40	15-50
7	150 micron	190	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST RESULTS OF GRADATION FOR WMM

Lab ID : **CP-RW-2019-07-01-04** **Date: 29-03-19**

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of road cut portion done by BWSSB at Sai Nagara Phase-2 and Jyothi Nagara Surrounding areas in Ward No:03 Attur.

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 27-03-19

Type of Mix : WMM (Wet Mix Macadam)

Date of test : 27-03-19

Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	321	321	2.9	97.1	95-100
22.4	2258	2579	23.4	76.6	60-80
11.2	2167	4746	43.1	56.9	40-60
4.75	2245	6991	63.6	36.4	25-40
2.36	1629	8620	78.4	21.6	15-30
0.6	609	9229	83.9	16.1	8-22
0.075	1320	10549	95.9	4.1	0-5

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	CP-RW-2019-07-01-04
		Date: 29-03-19
Project Name	:	Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.
Name of Work	:	Restoration of road cut portion done by BWSSB at Sai Nagara Phase-2 and Jyothi Nagara Surrounding areas in Ward No:03 Attur.
Agency	:	R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064
Customer Reference	:	EE/TEC/WO/12/2018-19
Date of Receipt	:	27-03-19
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	27-03-19

SLNo	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.6	300.6
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	74.5	74.6
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.7	225.6
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.8	24.8
6	Aggregate impact value (Mean of two tests)	Pecentage	24.8	

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2019-07-01-04** **Date: 29-03-19**
Project Name	:	Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.
Name of Work	:	Restoration of road cut portion done by BWSSB at Sai Nagara Phase-2 and Jyothi Nagara Surrounding areas in Ward No:03 Attur.
Agency	:	R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064
Customer Reference	:	EE/TEC/WO/12/2018-19
Date of Receipt	:	27-03-19
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	27-03-19

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.9%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.4%	

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TEST REPORT ON BITUMEN

Lab ID	:	**CP-RW-2019-07-01-04** **Date: 02-04-19**
Project Name	:	Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.
Name of Work	:	Restoration of road cut portion done by BWSSB at Sai Nagara Phase-2 and Jyothi Nagara Surrounding areas in Ward No:03 Attur.
Agency	:	R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064
Customer's Reference	:	EE/TEC/WO/12/2018-19
Date of Receipt	:	01-04-19
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test	:	01-04-19

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	68	60 to 70
2	Softening Point, °C	51.2	Min. 40°C
3	Ductility, cm	97	Min. 75cm
4	Flash point, °C	246	Min. 220°C
	Fire point, °C	273	

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TEST RESULTS OF GRADATION FOR OPEN GRADED PREMIX CARPET

Lab ID : CP-RW-2019-07-01-04

Date: 08-04-19

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of road cut portion done by BWSSB at Sai Nagara Phase-2 and Jyothi Nagara Surrounding areas in Ward No:03 Attur.

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 05-04-19

Type of Mix : Open Graded Premix Carpet

Date of test : 05-04-19

Weight of Sample : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
22.4	0	0	0.0	100.0	100
13.2	0	0	0.0	100.0	100
9.5	413	413	8.3	91.7	90-100
4.75	2199	2612	52.2	47.8	35-51
2.36	1044	3656	73.1	26.9	24-39
1.18	579	4235	84.7	15.3	15-30
0.3	303	4538	90.8	9.2	9-19
0.075	171	4709	94.2	5.8	3-8
PAN	291	5000	100.0	0.0	0

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR PREMIX CARPET

Lab ID : **CP-RW-2019-07-01-04**

Date: 08-04-19

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of road cut portion done by BWSSB at Sai Nagara Phase-2 and Jyothi Nagara Surrounding areas in Ward No:03 Attur.

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 05-04-19

Type of Mix : Open Graded Premix Carpet

Date of test : 05-04-19

Physical Requirements fo Coarse Aggregate for Premix Carpet

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	11.3	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	9.6		
Strength	Aggregate Impact Value	21.6	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.57	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.33	Maximum 2%	IS:2386 Part III

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : **CP-RW-2019-07-01-04** **Date: 08-04-19**

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of road cut portion done by BWSSB at Sai Nagara Phase-2 and Jyothi Nagara Surrounding areas in Ward No:03 Attur.

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 05-04-19

Type of Mix : Open Graded Premix Carpet

Date of test : 05-04-19

Type of Binder : 60/70

% of Binder Used : 5.0%

Weight of Aggregate : 200.0 gm

Weight of Binder : 10.0 gm

Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	99.5	0.5	99.2	Minimum Retained Coating 95%
2	99.0	1.0		
3	99.0	1.0		

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TESTS RESULTS ON STABILITY OF MIX

Lab ID : **CP-RW-2019-07-01-04** **Date: 08-04-19**

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of road cut portion done by BWSSB at Sai Nagara Phase-2 and Jyothi Nagara Surrounding areas in Ward No:03 Attur.

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 05-04-19

Type of Mix : Open Graded Premix Carpet

Date of test : 05-04-19

The results of the tests conducted on the Premix Carpet sample are as follow

SLNo	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-16
1	Marshal Stability at 60°C, KN	10.53	10.12	8.2KN(min)
2	Marshal flow at 60°C, mm	3.23	3.27	2-4
3	Percent air Voids	4.58	4.26	3-5
4	Percent Voids in mineral Aggregate(VMA %)	13.87	13.93	13-15
5	Percent Voids filled with Bitumen(VFB %)	70.31	70.0	65-75
6	Density, g/cc	2.26	2.24	–

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